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(54) Food package having opposed compartmentalized trays.

(57) A relatively large volume meal or snack food package (10). A pair of elongated generally rectangular trays (11,12) meet along a joining line (32), allowing the two trays to be positioned side-by-side or folded about the joining line with their tops facing each other. Each tray has at least two compartments, preferably approximately 3/4 to 1 inch in depth (19.05 to 25.4 mm), at least 2 1/2 inches (63.5 mm) in width and having a length at least double its width. Each tray contains a food or other product and the compartments, or at least the compartments containing a food product, are sealed with a transparent flexible film (40). The overall shape of the space occupied by the compartments of each tray is essentially the same as the corresponding space of the other tray, such that when folded about the joining line with the tops of the trays facing each other, the package is generally brick shaped.

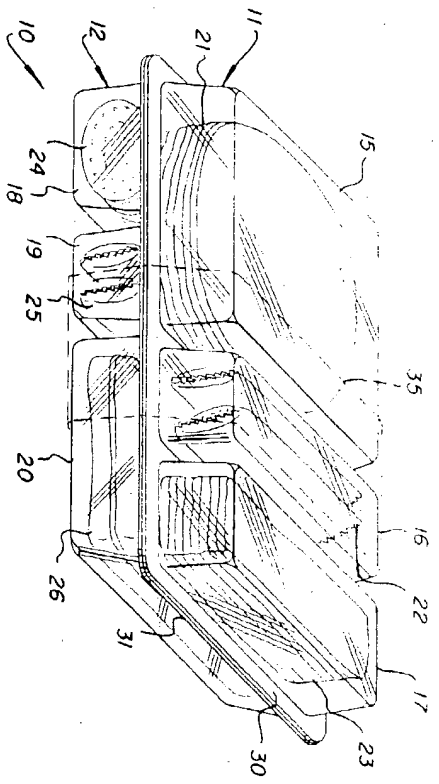

Fig. 1

EP 0 500 318 A1

Field of the Invention

This invention relates to packages, and in particular it relates to a new and improved food package for a ready to eat snack or meal.

Background of the Invention

Various food packages are known which contain foods in a form which is visible to the purchasing consumer. The need for visibility is of particular importance in the case of a ready-to-eat food product since, without the intermediary steps of defrosting, heating, etc., the appearance of the product on the shelf is more directly related to the consumer's perceived satisfaction with that food product.

One such package which contains a ready-to-eat food product comprises a rigid base tray having food receiving compartments therein and covered with a transparent flexible film which hermetically seals the compartments. To protect the rigid base tray and provide a surface for labelling information, this base tray has been provided with an outer enclosure container. Packages of this type are shown for example in U.S. Design Patents Nos. 305204 and 305205. In another food package designed especially for conveying ready-to-eat foods, two relatively small rigid base trays have been positioned with their tops against each other to provide a relatively compact food package especially adaptable for use in vending machines or the like. Such a compact package is shown in our European Patent Application No. 90309802.8 (EP-A-0420429).

While these previous food packages have proved to be highly successful, there exists a continuing need to provide new and different food packages for different types of ready-to-eat food products and/or in ways which minimize the quantity or different types of packaging materials encompassed in a given package so as to facilitate recycling and therefore be a more "environmental friendly" package. àlso, a reduction in the quantity and different types of materials used in a given package will reduce the cost thereof.

Also, a continuing need exists to provide a food package for a ready-to-eat snack or meal containing a relatively large volume of food, for example a hearty lunch meal, which package satisfies the numerous requirements of providing maximum visibility for the food contents of the package, assuring protection of the foods both from deterioration and structural damage during the rather rigorous conditions of manufacture and travel in commerce to the supermarket shelf. It would be particularly beneficial if these goals could be met in a package which satisfies the additional desired goals of being environmental friendly and minimizing the costs of the package.

Summary of the Invention

These needs of the prior art are satisfied according to the present invention by providing a relatively large volume snack or meal package formed by a pair of relatively large, generally rectangular compartmentalized base trays, the overall shapes of which are generally the same as each other, the two trays meeting and preferably joined along one long edge of each, the compartments of at least those tray compartments having perishable food therein being sealed with a flexible transparent film.

Each tray would in a preferred arrangement have at least two compartments which extend completely across the width thereof, each compartment being approximately 3/4 inch to 1 inch (19.05 mm to 25.4 mm) in depth, each tray itself being approximately 3 to 3 1/2 inches (76.2 mm to 88.9 mm) across its width and approximately 7 to 8 inches (177.8 mm to 203.2 mm) in length. Each tray therefore has a width substantially greater than its depth and a length substantially greater than its width. The result is to provide a relatively large volume of food in a convenient space, whether the trays are left open, side-by-side or are folded so that the tops face each other.

A package of this type can be formed of any suitable material, particularly materials which can be recycled. The fact that the number of different materials is minimized, for example an outer paperboard container is not required, renders this package more environmental friendly. The specific materials which can be utilized to form this package and the environmental friendly aspects of these materials is fully discussed in our European Patent Application No. 91310050.9.

This package can include a virtually endless variety of foods, but preferably ready-to-eat foods. Examples would include proteinaceous foods such as meat, fish, poultry, cheese, peanut butter, etc., farinaceous foods such as breads, crackers, etc., condiments, desserts, including confectioneries, fruits and so on including, for example snack items such as pretzels, nuts, etc. The compartments may also include implements such as plastic utensils and napkins. In one application of the present invention, one tray may contain all of the items requiring hermetic sealing while the other tray might contain items which do not require hermetic sealing such as utensils, prepackaged desserts and condiments, prepackaged crackers and the like. In this case only the side with the perishable food products must be hermetically sealed while a less expensive closure, if any, can be provided over the other tray.

This package, being of relatively large size with ready-to-eat food products, condiments and implements and the like therein, all visually accessible to the consumer can serve purposes not satisfied heretofore.

For example, it may provide in a ready-to-eat form a complete lunch. For example large compartments may include slices of bread with smaller compartments containing slices of cheese, meats or the like and still other smaller compartments containing condiments, utensils or the like. The result can be a full sandwich type lunch meal. A package of this nature would be suitable not only for conventional sales in supermarkets, convenience stores and the like but also for use in the airline industry for short flights wherein a "snack" meal is provided.

The two trays may be sold commercially either with the tops of the two trays facing each other or with the two trays arranged side-by-side. With the two trays having their tops against each other, the bottoms of the two trays then form the outer top and bottom of the overall package which is generally brick shaped and since the package would normally be formed of a transparent material, the contents of all compartments of both trays would be fully visible to the purchasing consumer through the top, bottom, front, back and both sides of the package. Labelling information may be provided by encircling this brick shaped food package with a band wrapped around the central girth thereof.

If the package is provided with the two trays open and side-by-side, the food products are even more fully visible through the transparent films as well as all outside compartment walls. When the package is sold in this manner, a suitable adhesive label will be applied against the transparent flexible film or films providing some degree of protection therefor and providing necessary labelling information. When sold in this fashion, additional stiffness may be provided, for example by attaching a card or the like to the bottom of the package. Such a bottom card could include additional labelling information. When provided in this manner, the backing card or other enclosure can provide this package with the ability to stand on one edge. Such backing arrangements are described in greater detail in our co-pending European Patent Application No. 91310050.9 or conversely, when the package is sold in this manner, a hole may be provided along the upper edge of the package or in a header extending upwardly from the upper edge of the package so that the package may be hung on a peg.

The fact that both trays are generally the same overall shape (that is, the overall height, width and depth of the totality of compartments of each tray, disregarding space between trays) has several advantages. First, when the trays are positioned with their tops facing each other it provides a unique symmetrical brick-like appearance. Additionally, whether the trays are sold in "brick" form or with the trays side-by-side, the fact that the two trays are generally of the same overall shape will facilitate the use of the tray as a plate when the contents are being consumed.

Thus, it is an object of the present invention to provide a new and improved food package, particularly for ready-to-eat snacks or meals, which is particularly adaptable for a relatively large volume of food, while concurrently achieving the necessary goals of achieving high visibility of the contents of the package while maintaining the structural integrity of the package and preserving the freshness of the food contents during rigorous handling conditions from manufacturer through to the supermarket shelf.

It is another object of the present invention to provide a new and improved package of the type described comprising a pair of similar elongated rectangular trays, preferably joined along one edge, and capable of being arranged side-by-side or with their tops against each other.

It is still another object of the present invention to provide a new and improved relatively large volume snack or meal package of the type described which includes suitable means for providing labelling information.

It is still another object of the present invention to provide a new and improved relatively large volume snack or meal food package of the type described wherein when the package is formed with the trays side-by-side, including means to preserve the structural integrity of the package and/or permit the package to be arranged upright on the supermarket shelf.

It is still another object of the present invention to provide a food package of the type described wherein when the two trays oppose each other to constitute a brick shaped package, wherein labelling information may be provided by a band which encircles the girth of the package.

These and other objects and advantages of the present invention will become more apparent from the detailed description to follow which is to be read together with the accompanying drawings.

Brief Description of the Drawings

The present invention will now be described in detail with respect to preferred embodiments thereof, which are to be taken together with the accompanying drawings, wherein:

Figure 1 is a perspective view of a snack food or meal package made in accordance with the present invention.

Figure 2 is a right side elevational view of Figure 1.

Figure 3 is a top plan view of Figure 1.

Figure 4 is a top plan view of the package of Figure 1, with the top tray folded about the line which joins it to the lower tray and arranged side-by-side therewith.

Figures 5A and 5B are schematic views which are front elevational views of packages made in accordance with the present invention, but diagrammatically illustrating compartment arrangements different from

that shown in Figures 1 through 4.

Detailed Description of the Preferred Embodiments

Referring to the drawings, like elements are represented by like numerals throughout the several views.

Figure 1 illustrates a snack or meal food package 10 comprising a first tray 11 and a second tray 12. The package 10 is shown in side elevational and top views in Figures 2 and 3, respectively. Figure 4 illustrates this same package 10 (except for the optional dotted line features which will be described below) with the tray 11 beside the tray 12 rather than superimposed onto the tray 12. The following description will refer to Figures 1 through 4.

In the embodiment illustrated in Figure 1, the tray 11 includes three compartments 15, 16 and 17 while the lower tray includes three compartments 18, 19 and 20. It is a feature of the present invention that the overall volume taken up by the compartments of the tray 11 be essentially the same as the overall volume taken up by the compartments of the lower tray 12. More specifically, ignoring the space between the compartments, the volume defined by the left hand end of compartment 15, the right hand end of compartment 23, the plane of the remote side of the compartments 15, 16 and 17, the plane of the front side of compartments 15, 16 and 17 and the plane of the bottoms of compartments 15, 16 and 17 (i.e., uppermost as viewed in Figure 1) is essentially the same as the corresponding volume of the compartments of Figure 12. This feature provides the advantage of providing a full hearty appearance while in fact maximizing the space available for food. In addition, at least because the compartments of both trays are of essentially the same depth and the bottoms of the compartments of each tray lie in a common plane, when the package is utilized as an eating tray with the trays side-by-side, as shown in Figure 4, the package will rest on a plane surface without rocking back and forth.

Before describing the package of Figure 1 in greater detail, it is to be noted that the number of compartments in each tray can vary, virtually without limit, depending upon the desired characteristics of the food or other products to be included therein. As examples, diagrammatic Figures 5A and 5B show only in front view other possible variations of the compartments of the upper and lower trays. In Figure 5A, package 10a includes trays 11a and 12a, while Figure 5B shows package 10b having still differently shaped trays 11b and 12b. The particular shape of the trays will be dependent on the food items to be included.

Referring now to Figures 1 through 4, this package will be described with a typical set of items which, taken together, illustrate a typical commercially desirable combination of food and other items which would form a large snack or meal. The compartment 15 would include for example turkey slices 21. The compartment 16 would include condiments 22 such as packs of mustard, mayonnaise or the like. Compartment 17 would include slices 23 of another meat such as ham. Referring now to the compartments of tray 12, compartment 18 could include a farinaceous product such as crackers 24. The smaller central compartment 25 could include other condiments such as prepackaged sauces or a dessert such as mints. In this particular combination, the larger compartment 20 could include bread slices 26.

Referring to Figure 4, tray 11 includes a peripheral flange 30 which encircles the entire tray in an upper reference plane while internal flanges 36, also in this reference plane, divide the compartments 15, 16 and 17 from each other. Similarly, the other tray 12 includes a peripheral flange 31 which completely encircles the periphery of that tray with internal flanges 37, lying in the same plane as flange 31, separating the compartments 18, 19 and 20 from each other. After the compartments of each tray are filled, a flexible transparent film 40 is applied against the peripheral and internal flanges, hermetically sealing the respective compartments.

To manufacture the package of Figures 1 through 4, the two trays 11 and 12 would preferably initially be formed as individual trays, both initially being processed with the bottoms of the compartments (that is the uppermost and lowermost portions of the package as shown in Figure 1) lowermost on a surface, either stationarily or on a conveyor surface, during which the compartments would be filled and sealed. The two trays are preferably formed as one piece, hinged along line 32 where they join or are formed as two separate trays which are subsequently joined together at line 32 after sealing. Alternatively, the trays may be kept separate if for example the trays are arranged with their tops against each other so that they are held together by a band or the like.

If the package containing the trays 11 and 12 is initially formed as one piece, then during the steps of filling the compartments and applying the transparent flexible film, the package will appear as shown in Figure 4 with the trays side-by-side. In this case a single film 40 can be applied across the entire area occupying the tops of both trays. Alternatively, if the trays 11 and 12 are formed as separate elements, they can be processed in one of several ways. The trays may proceed and be filled side-by-side (just as if they were joined) and then either sealed with a flexible film separately, two different films, or together with a single film concurrently applied across both trays. If the trays are separate, they would be joined together along the joining line 32. If a single flexible film is applied, that could supply a sufficient bond to join the two trays together for folding about the joining line 32. If separate films are applied to the two trays 11 and 12 (or for additional strength of a single film is applied across

both trays) an adhesive tape may be applied along the peripheral flanges 30 and 31 adjacent the joining line 32, either above or below said flanges.

If the package is to be folded and sold in the form as shown in Figures 1 through 3, a means must be provided to apply labelling information to the package. In a preferred arrangement, a band 35 of suitable materials such as plastic, paper stock or the like may be wrapped around the package. This would provide the additional function of holding the two trays 11 and 12 together. It is to be understood, however, that other labelling arrangements may be utilized. For example the two trays could be attached together by adhesive, preferably in the front middle of the package while adhesive labels are applied to some of the flat surfaces of the package.

Figure 4, in addition to illustrating the early steps in the formation of the package of Figures 1 through 3, illustrates a different form by which the package may be sold in commerce. As illustrated here, the trays 11 and 12 are arranged side-by-side. Leaving the trays 11 and 12 in this position during commercialization of the package has the advantage of providing even more areas to expose the contents of the package for visual inspection by the consumer. If sold in this manner, this package would initially be formed according to any of the procedures discussed above. In addition, labelling information could be applied by attaching an adhesive label 43 at a suitable position against the flexible film 40 so as to leave major portions of the contents of the food unobstructed for visual viewing by the potential customer. A package of this type can include backing materials both for protection of the package, for assuring its structural rigidity and possibly for allowing this package to stand on its lower end, i.e., the end which is lowermost in Figure 4. Examples of such backings are shown in our co-pending European Patent Application No. 91310050.9.

In the alternative, the package of Figure 4 can be provided with an opening for hanging this package on a peg such as on a pegboard. This may include an opening 41 formed in the top portion of peripheral flange 40 or a header 42 which may be an extension of peripheral flange 30 or a piece of material added thereto. This header would then include the opening 44.

Although the invention has been described in considerable detail with respect to preferred embodiments, it would be apparent that the invention is capable of numerous modifications and variations, apparent to those skilled in the art, without departing from the spirit and scope of the invention.

Claims

1. A relatively large volume meal or snack food package which may include hermetically sealed perishable foods, for transport in commerce, comprising:

a pair of elongated, generally rectangular trays, each having a top which includes an outer peripheral flange extending all around the border of the tray, the trays meeting along a joining line, whereat peripheral flanges along the longer sides of the two trays meet, the outer peripheral flanges of the two trays being of generally the same shape as each other so as to mate with each other when the two trays are folded along the joining line such that their tops face each other.

each tray having at least two compartments extending for the full width of the tray with generally vertical side walls, each tray having an overall length more than twice its width and a height substantially less than its width so as to provide a stable large volume meal or snack food package, internal flanges in the same plane as the outer peripheral flange and located between compartments of each tray,

the trays being formed of a transparent material sufficiently rigid to maintain its shape and prevent physical damage to the contents during normal packaging and travel in commerce, perishable food products contained in at least some of said compartments, and including a flexible transparent film covering at least some of the compartments and attached to the peripheral and internal flanges of each tray so as to air-tightly seal at least those respective compartments containing a perishable food product,

the overall length and overall width of the group of compartments in each tray being essentially the same as in the other tray, such that the overall space formed by the length, width and height of the two trays, which space includes non-compartment structures between the compartments in a given tray, are essentially identical to each other,

wherein the large volume snack food package is capable of being:

(1) left unfolded with the trays side-by-side to provide a large, generally flat, relatively large volume meal or snack food package so that the package exposes the products in the at least four compartments through the flexible film covering the tops of the compartments as well as through the sides and bottoms of the compartments, or

(2) folded over with the tops of the two trays facing each other, providing a generally brick shaped food package with the contents visible through the sides and bottoms of the compartments.

2. A package according to claim 1, wherein each

tray is at least 2 1/2 inches (63.5 mm) in width, at least 5 inches (127 mm) in length and has a depth of approximately 3/4 to 1 inch (19.05 to 25.4 mm).

3. A package according to claim 1 or claim 2, including three compartments in each tray.

4. A package according to any one of claims 1 to 3, wherein the two trays are folded about a joining line with the tops of the two trays facing each other.

5. A package according to any one of claims 1 to 4, wherein the two trays are formed as a single piece, arranged to be hinged at the joining line.

6. A package according to claim 4 or claim 5, wherein the two trays are connected to each other at the joining line.

7. A package according to claim 4, wherein the two trays are unconnected from each other at the joining line.

8. A package according to claim 4, wherein the two trays are separate pieces, subsequently joined at the joining line.

9. A package according to any one of claims 4 to 8, including a label band encircling the central part of the package and containing label information.

10. A package according to any one of claims 1 to 3, wherein the trays are left unfolded, with the trays arranged side-by-side.

11. A package according to claim 10, including a label attached to the transparent film.

12. A package according to claim 10 or claim 11, including a hole formed along one of the long edges of the tray opposite from its joining edge, thereby permitting the package to be hung on a peg.

13. A package according to claim 12, including a header attached to one of the long edges of the tray opposite from its joining edge, said hole being formed in the header.

14. A package according to any one of claims 10 to 13, including a stiffening sheet attached to the bottom of the package.

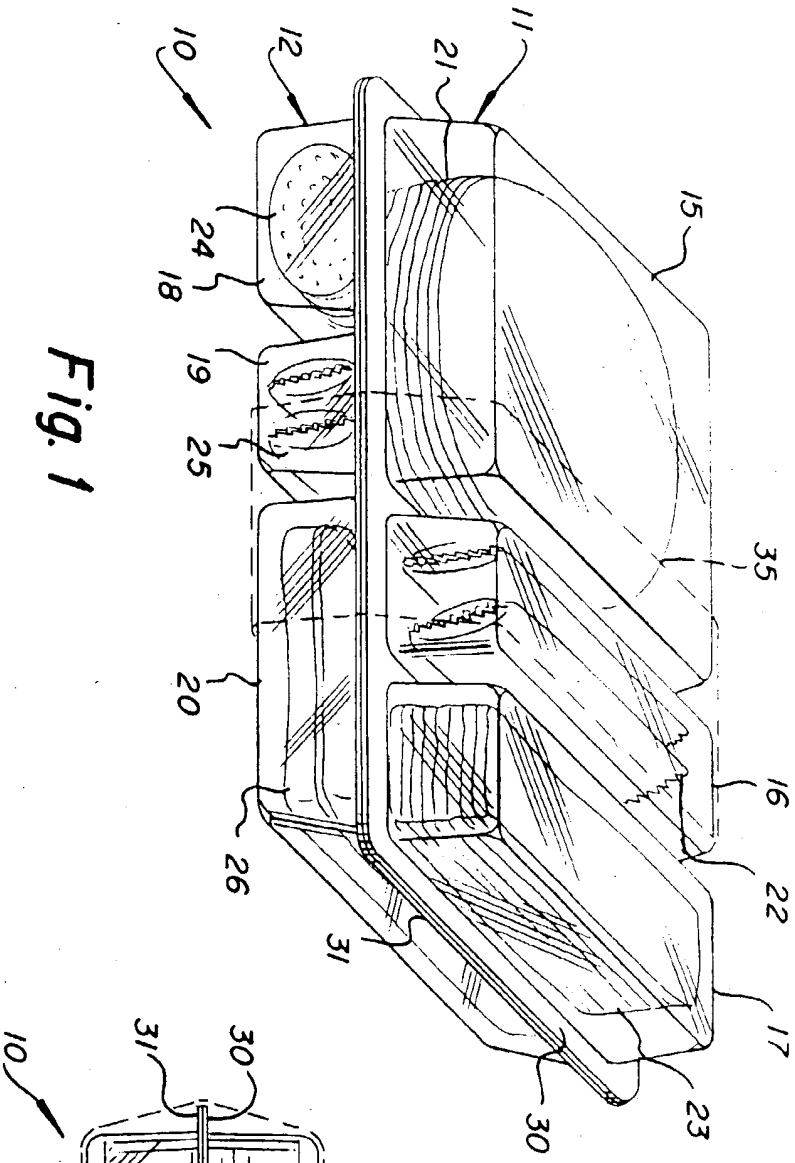
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Fig. 1

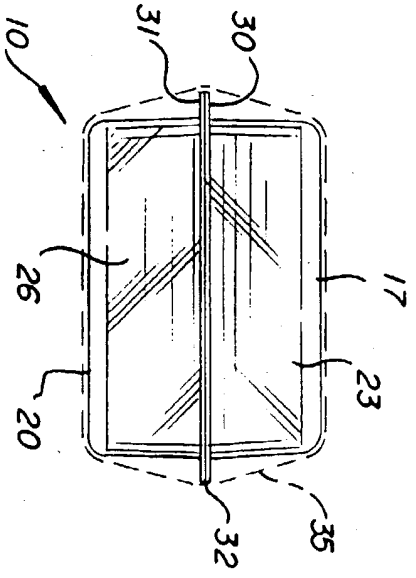
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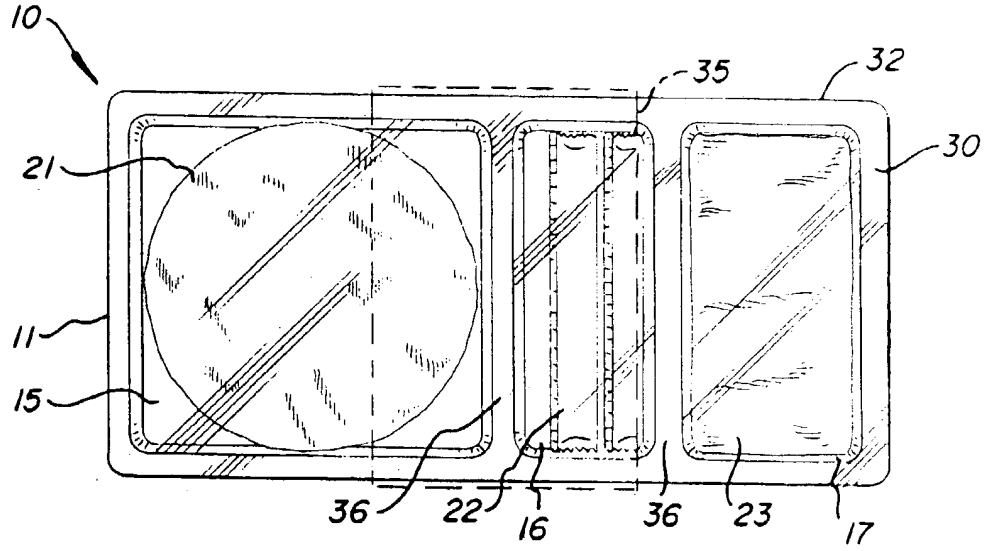
Fig. 2

Fig. 3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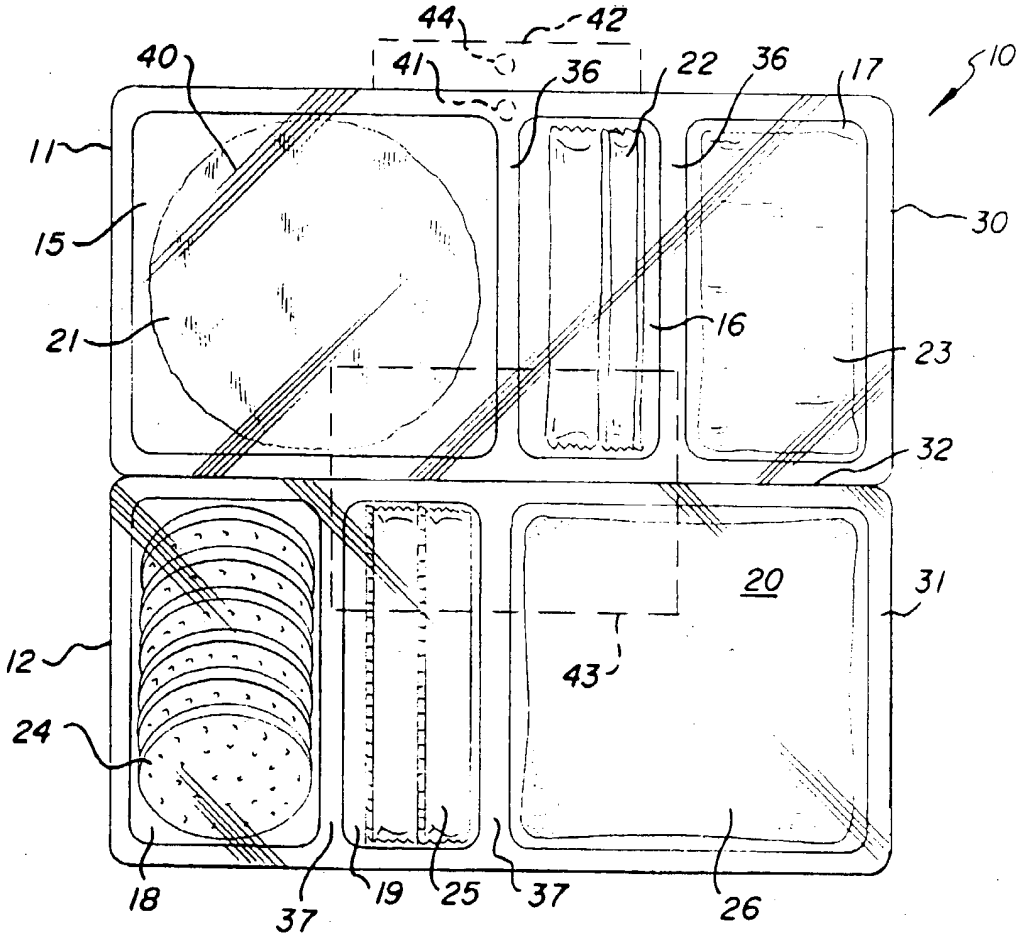
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Fig. 4

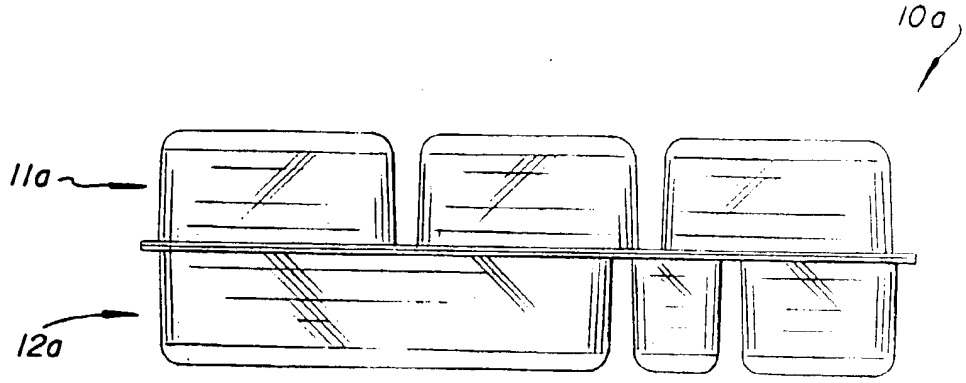

Fig. 5A

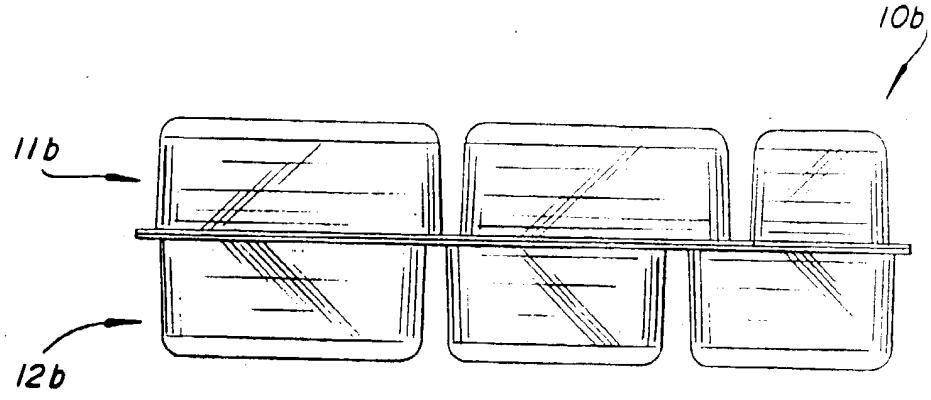

Fig. 5B

European Patent Office

EUROPEAN SEARCH REPORT

Application Number

EP 92 30 1319

DOCUMENTS CONSIDERED TO BE RELEVANT

Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int. Cl.5)
A	FR-A-2 220 439 (LUNCH LOCKER SYSTEMS) * figures 1-3 *	1	B65D1/36 B65D77/20
A	DE-A-3 110 847 (LUFTHANSA SERVICE) * abstract; figure 3 *	1	
A	DE-A-2 933 043 (WIPPERMANN) * figures 1-4 *	1	

TECHNICAL FIELDS SEARCHED (Int. Cl.5)

B65D

The present search report has been drawn up for all claims

Place of search	Date of completion of the search	Examiner
BERLIN	25 MAY 1992	SMITH C.A.

CATEGORY OF CITED DOCUMENTS

X : particularly relevant if taken alone
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E : earlier patent document, but published on, or after the filing date
D : document cited in the application
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